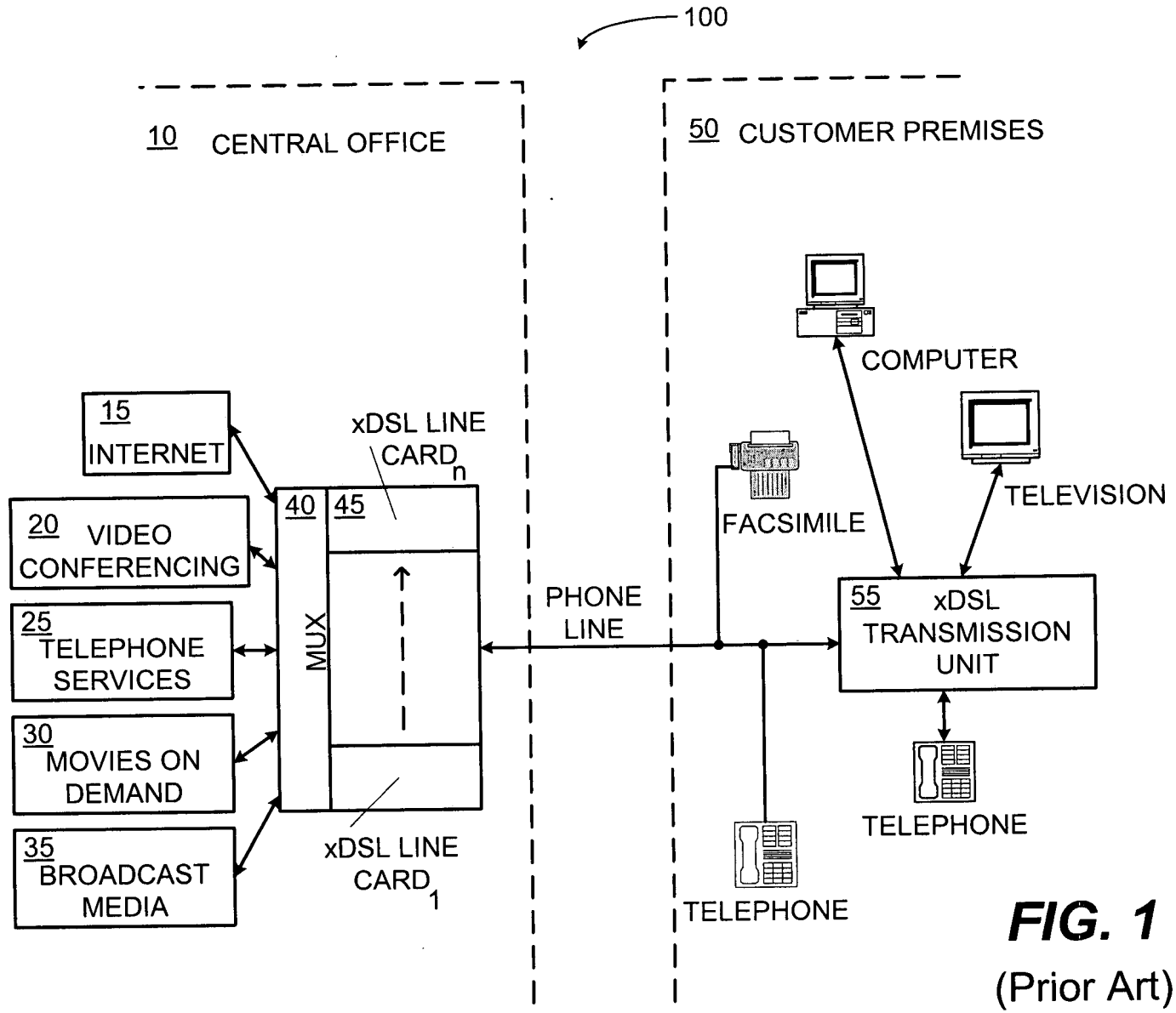


FIG. 1
(Prior Art)

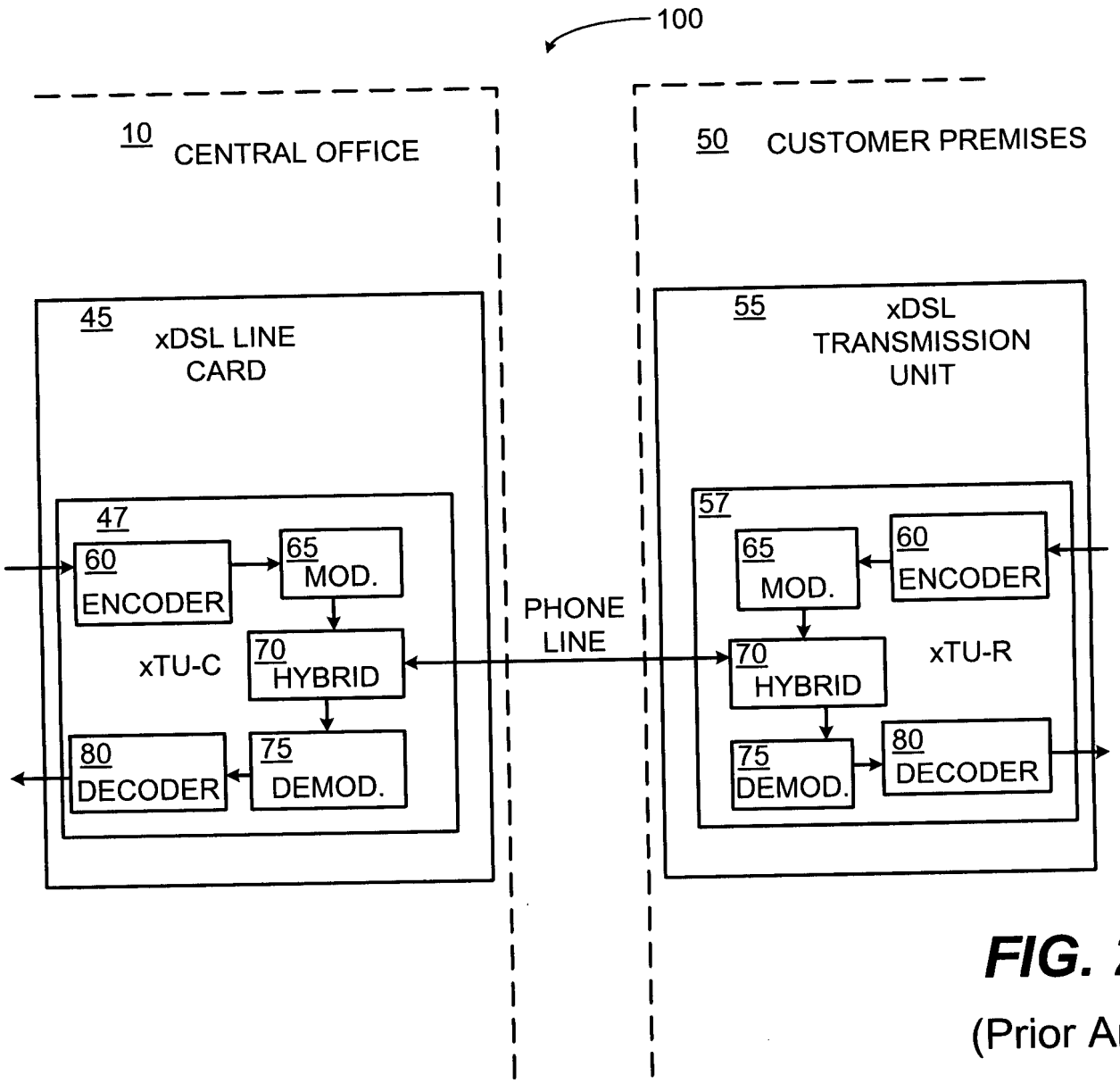


FIG. 2

(Prior Art)

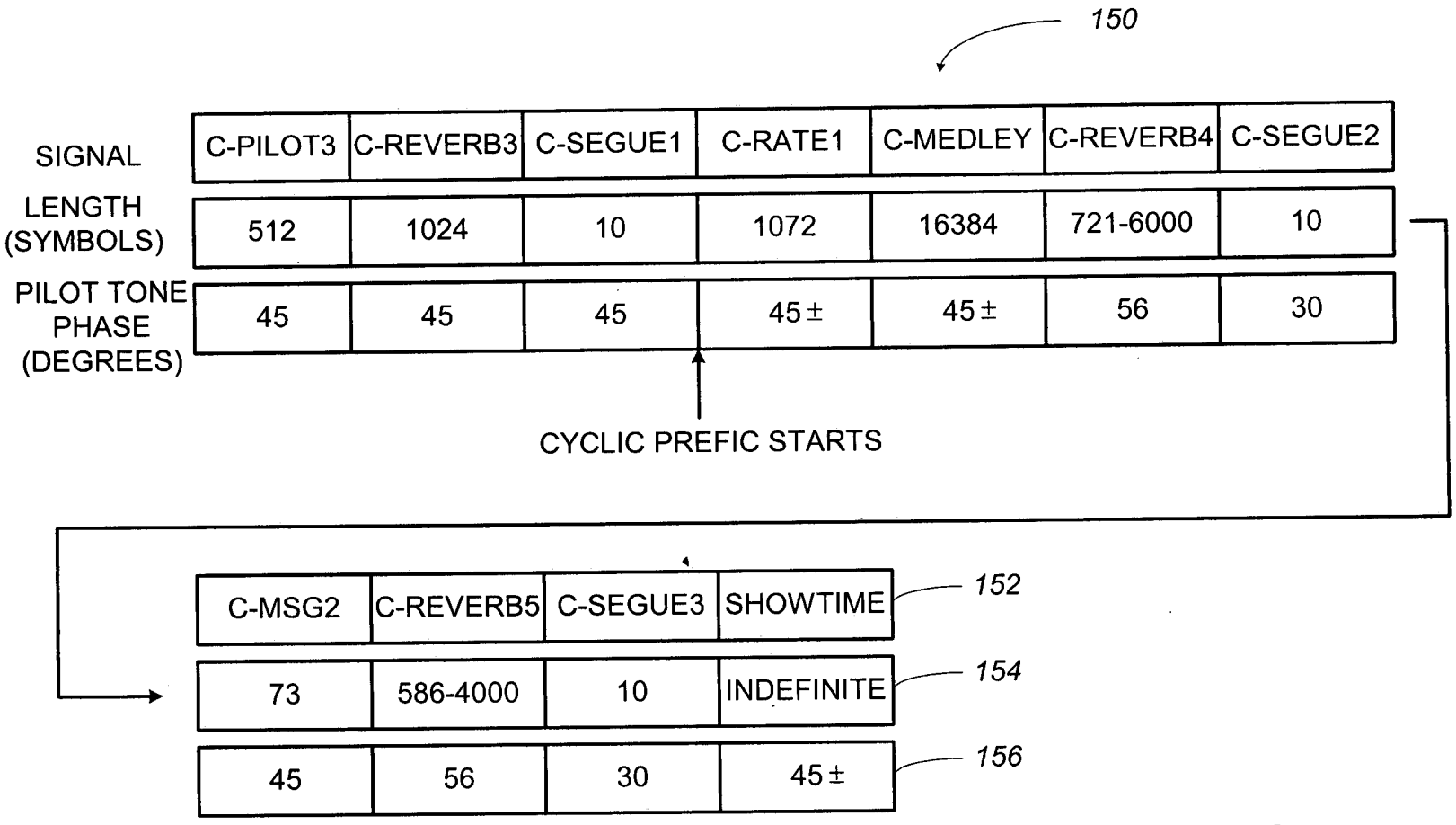

150
SIGNAL
LENGTH (SYMBOLS)
PILOT TONE PHASE (DEGREES)
C-PILOT3
C-REVERB3
C-SEGUE1
C-RATE1
C-MEDLEY
C-REVERB4
C-SEGUE2
512
1024
10
1072
16384
721-6000
10
45
45
45
45 ±
45 ±
56
30
CYCLIC PREFIC STARTS
C-MSG2
C-REVERB5
C-SEGUE3
SHOWTIME
152
73
586-4000
10
INDEFINITE
154
45
56
30
45 ±
156

FIG. 3

CLASSIFIED

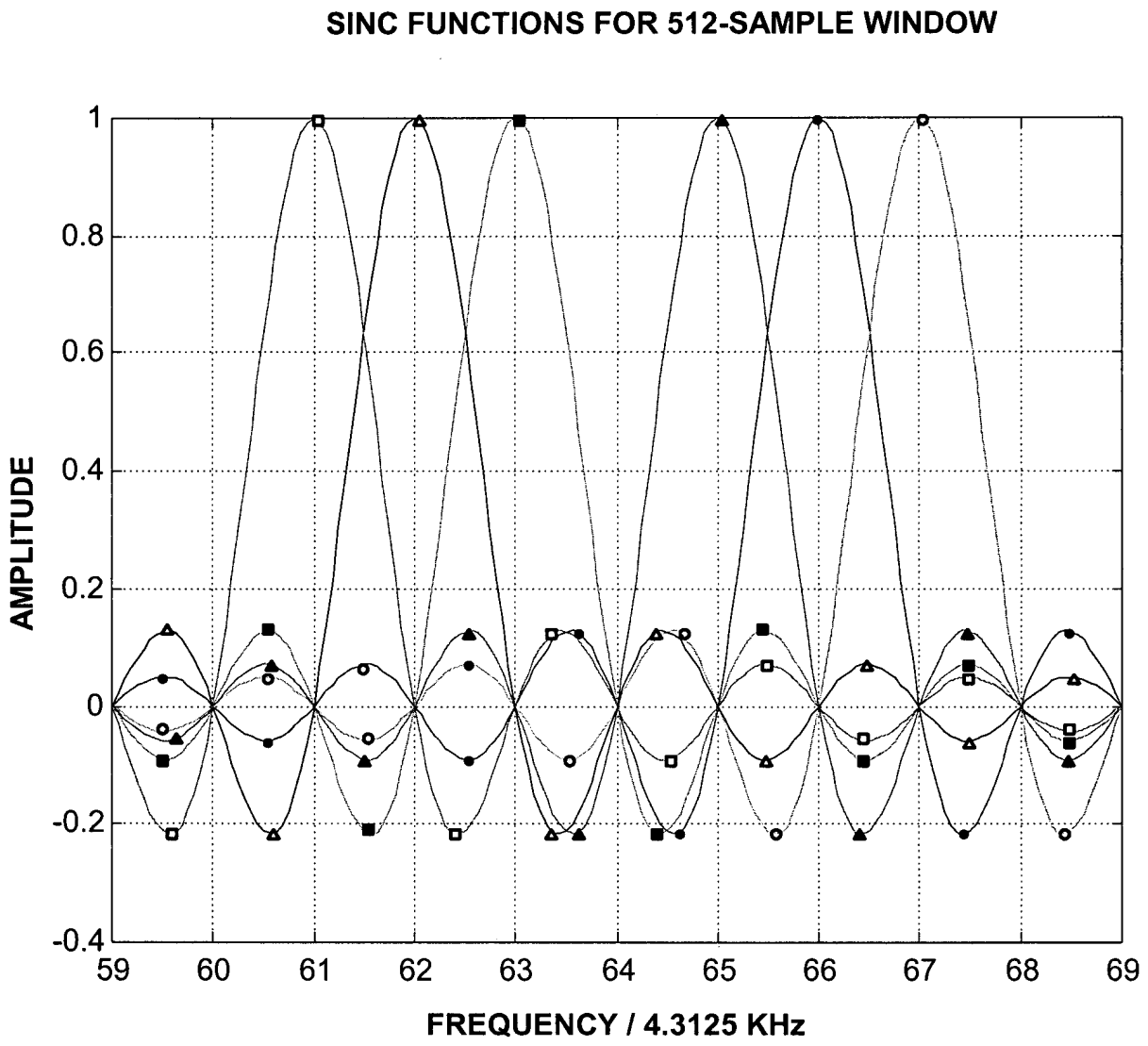


FIG. 4A

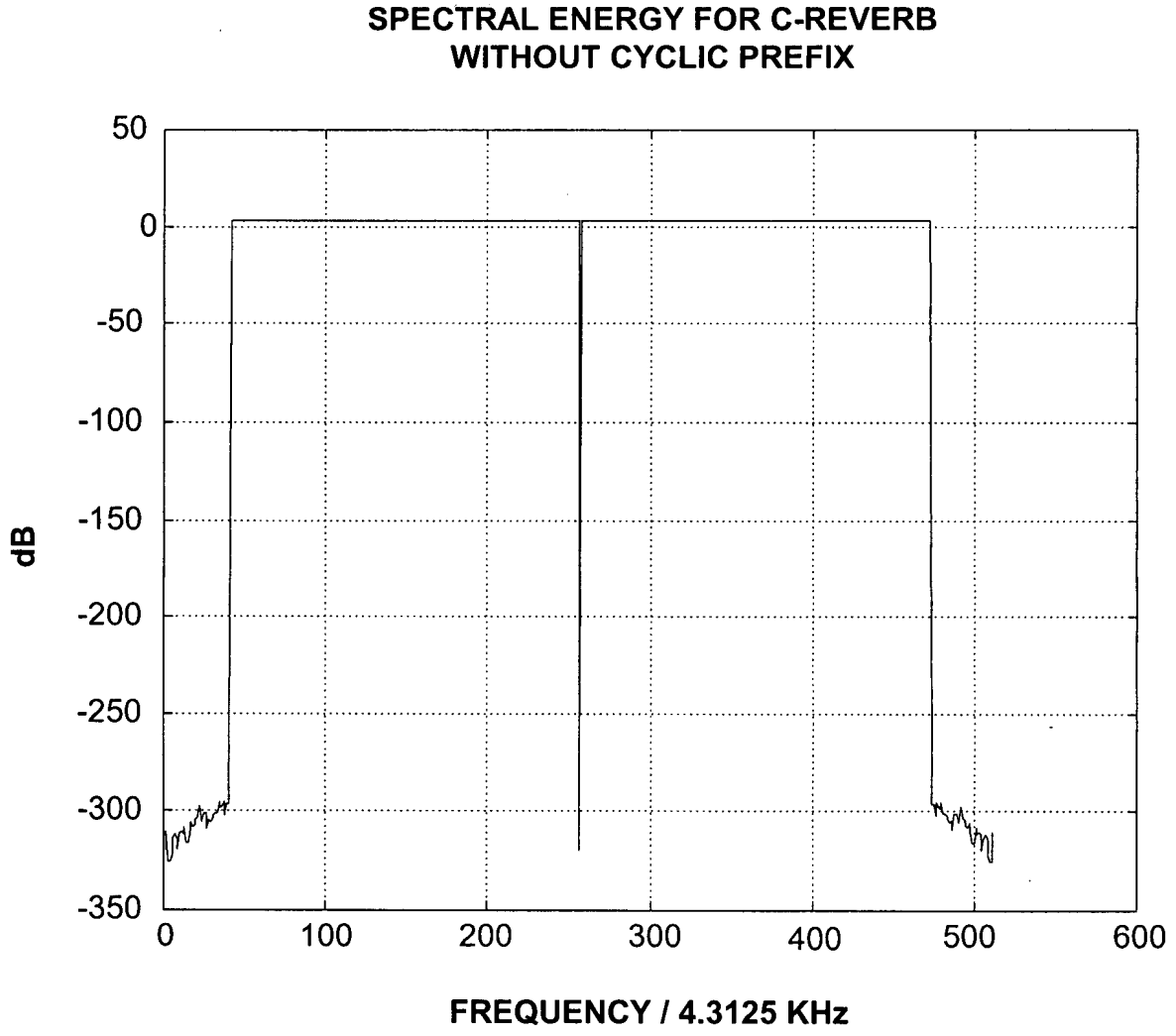
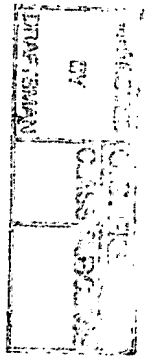

SPECTRAL ENERGY FOR C-REVERB
WITHOUT CYCLIC PREFIX
50
0
-50
-100
-150
-200
-250
-300
-350
dB
0
100
200
300
400
500
600
FREQUENCY / 4.3125 KHz

FIG. 4B



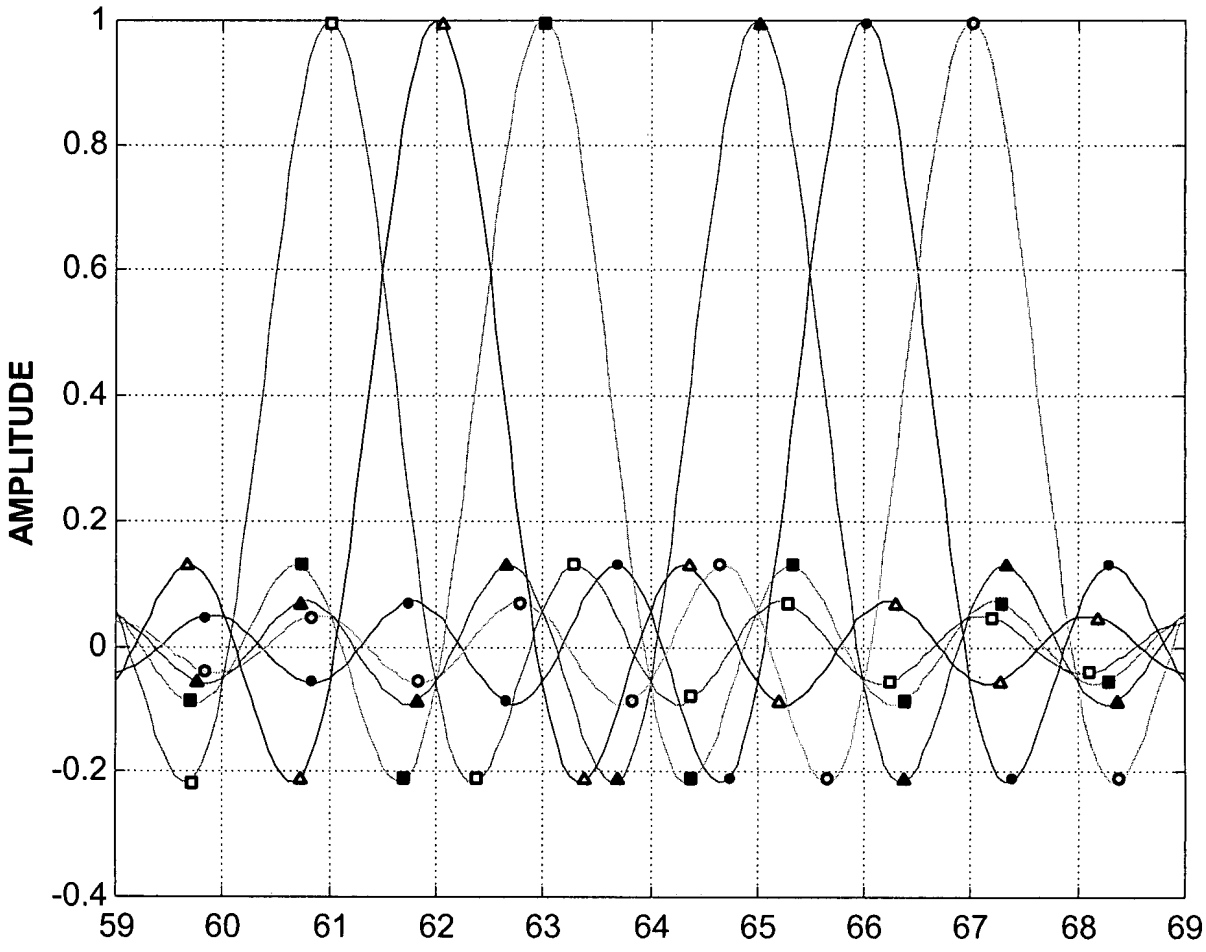

SINC FUNCTIONS FOR 544-SAMPLE WINDOW
AMPLITUDE
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
59
60
61
62
63
64
65
66
67
68
69
FREQUENCY / 4.3125 KHz

FIG. 5A

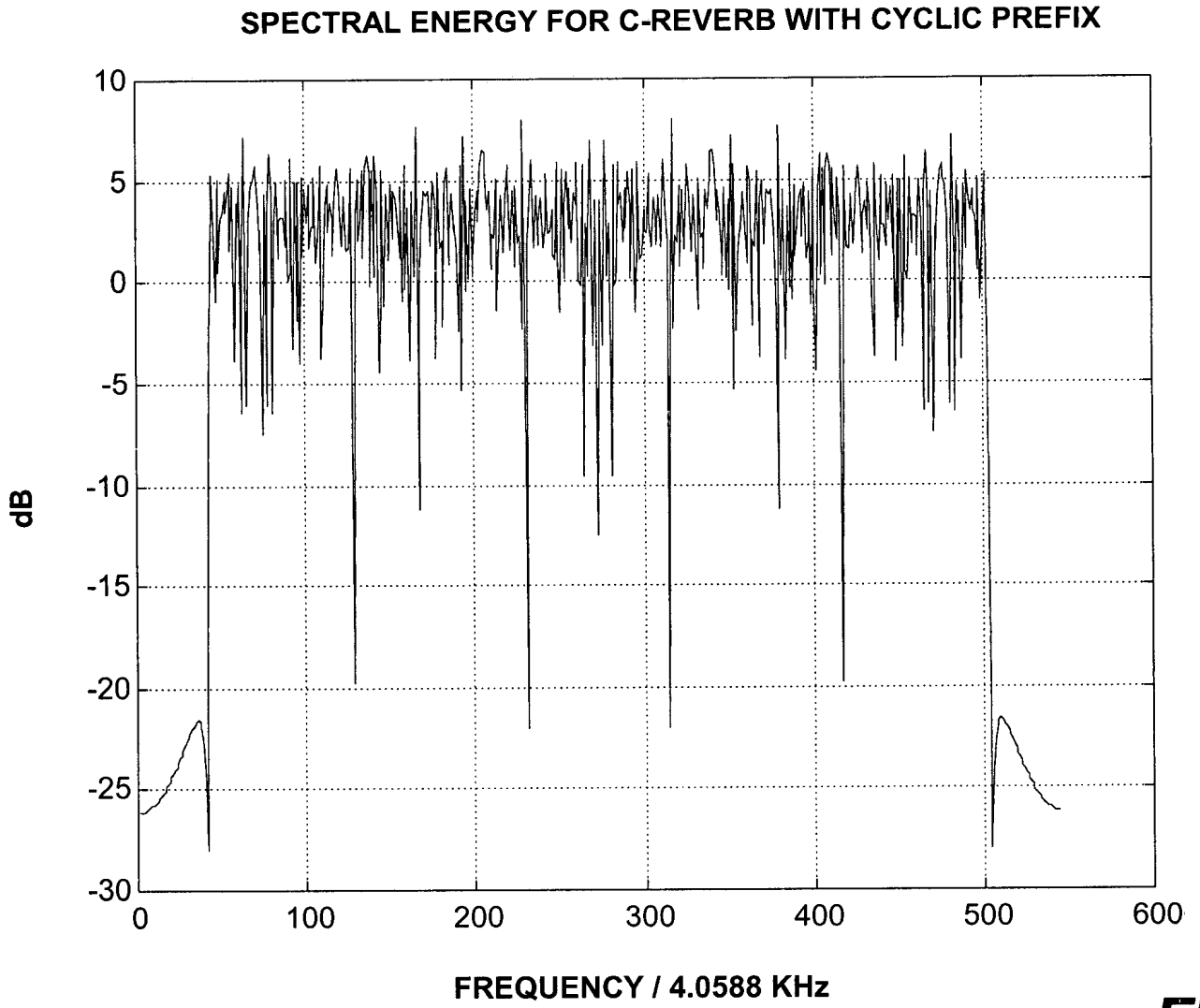

SPECTRAL ENERGY FOR C-REVERB WITH CYCLIC PREFIX
dB
10
5
0
-5
-10
-15
-20
-25
-30
0
100
200
300
400
500
600
FREQUENCY / 4.0588 KHz

FIG. 5B

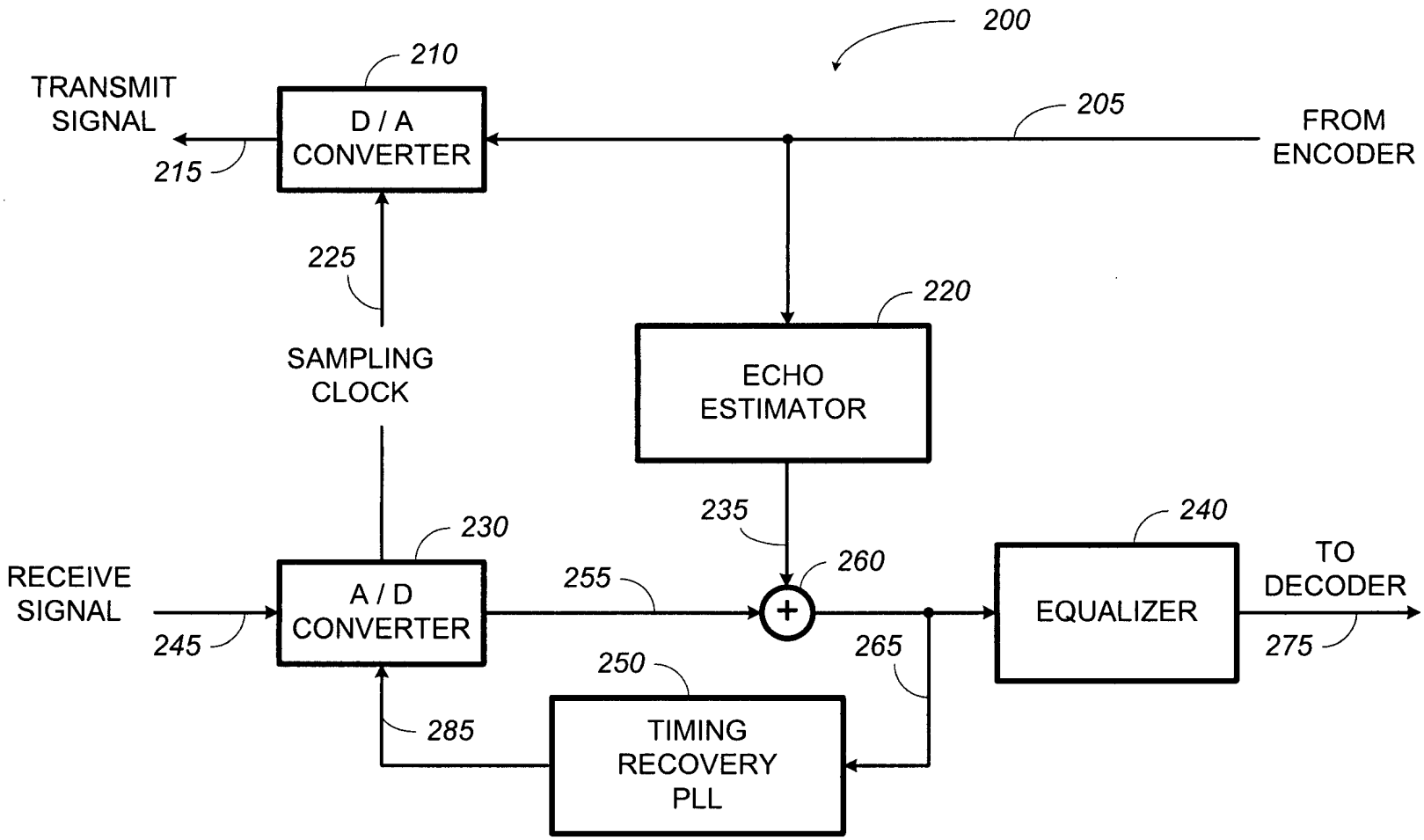

200
210
TRANSMIT SIGNAL
D / A CONVERTER
205
FROM ENCODER
215
225
220
SAMPLING CLOCK
ECHO ESTIMATOR
235
240
230
260
RECEIVE SIGNAL
A / D CONVERTER
255
TO DECODER
245
265
275
250
285
TIMING RECOVERY PLL

FIG. 6

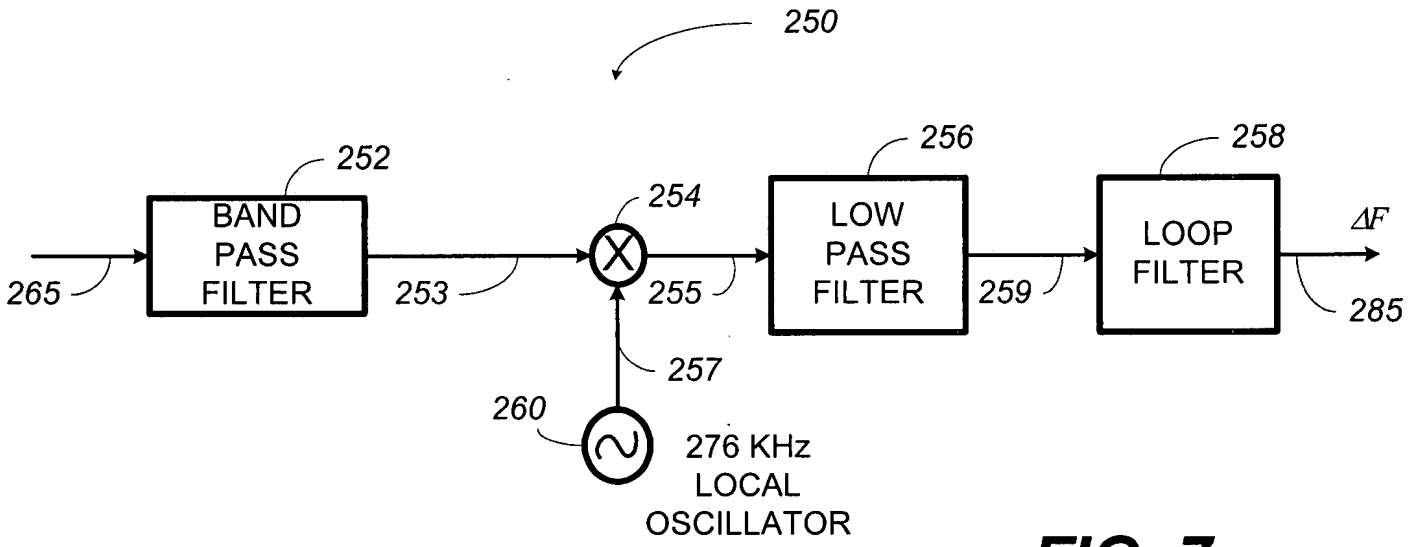

250
252
BAND
PASS
FILTER
254
256
LOW
PASS
FILTER
258
LOOP
FILTER
ΔF
265
253
255
259
285
257
260
276 KHz
LOCAL
OSCILLATOR

FIG. 7

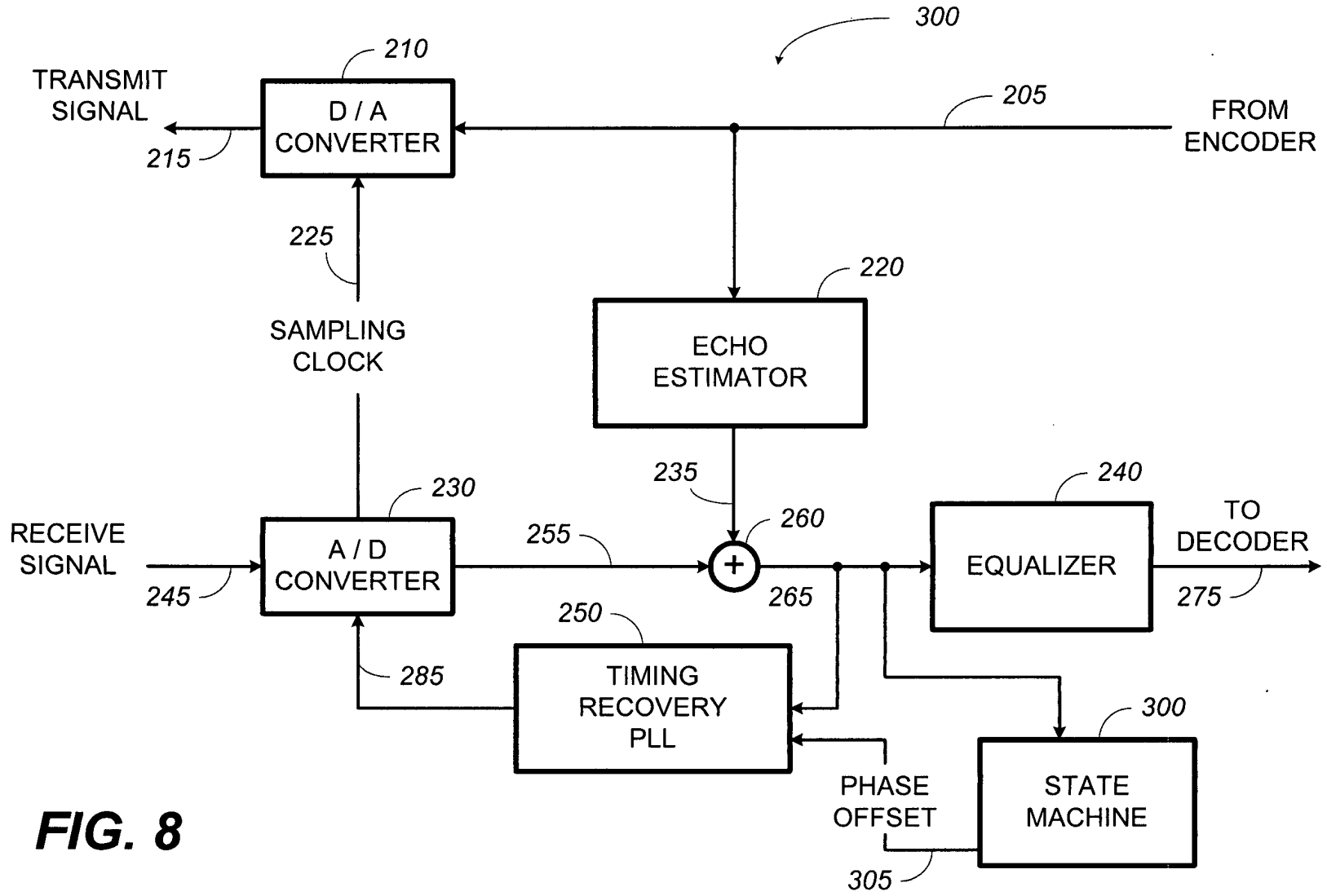

300
210
TRANSMIT SIGNAL
D / A CONVERTER
205
FROM ENCODER
215
225
SAMPLING CLOCK
220
ECHO ESTIMATOR
235
230
240
RECEIVE SIGNAL
A / D CONVERTER
255
260
TO DECODER
EQUALIZER
245
265
275
250
285
TIMING RECOVERY PLL
300
PHASE OFFSET
STATE MACHINE
305

FIG. 8

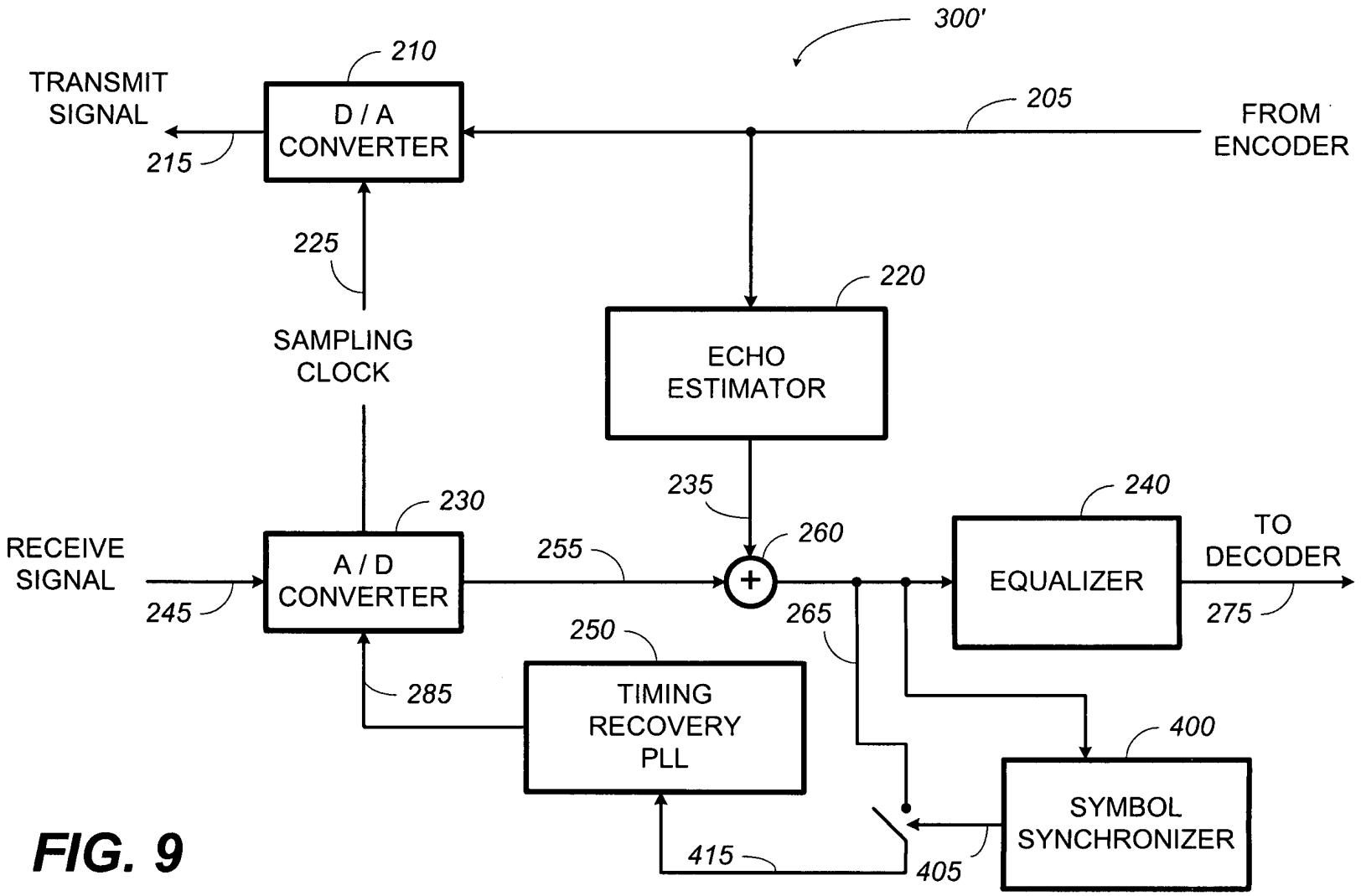

300'
210
TRANSMIT SIGNAL
D / A CONVERTER
215
205
FROM ENCODER
225
SAMPLING CLOCK
220
ECHO ESTIMATOR
235
230
240
RECEIVE SIGNAL
A / D CONVERTER
245
255
260
TO DECODER
EQUALIZER
275
265
250
285
TIMING RECOVERY PLL
400
SYMBOL SYNCHRONIZER
415
405

FIG. 9

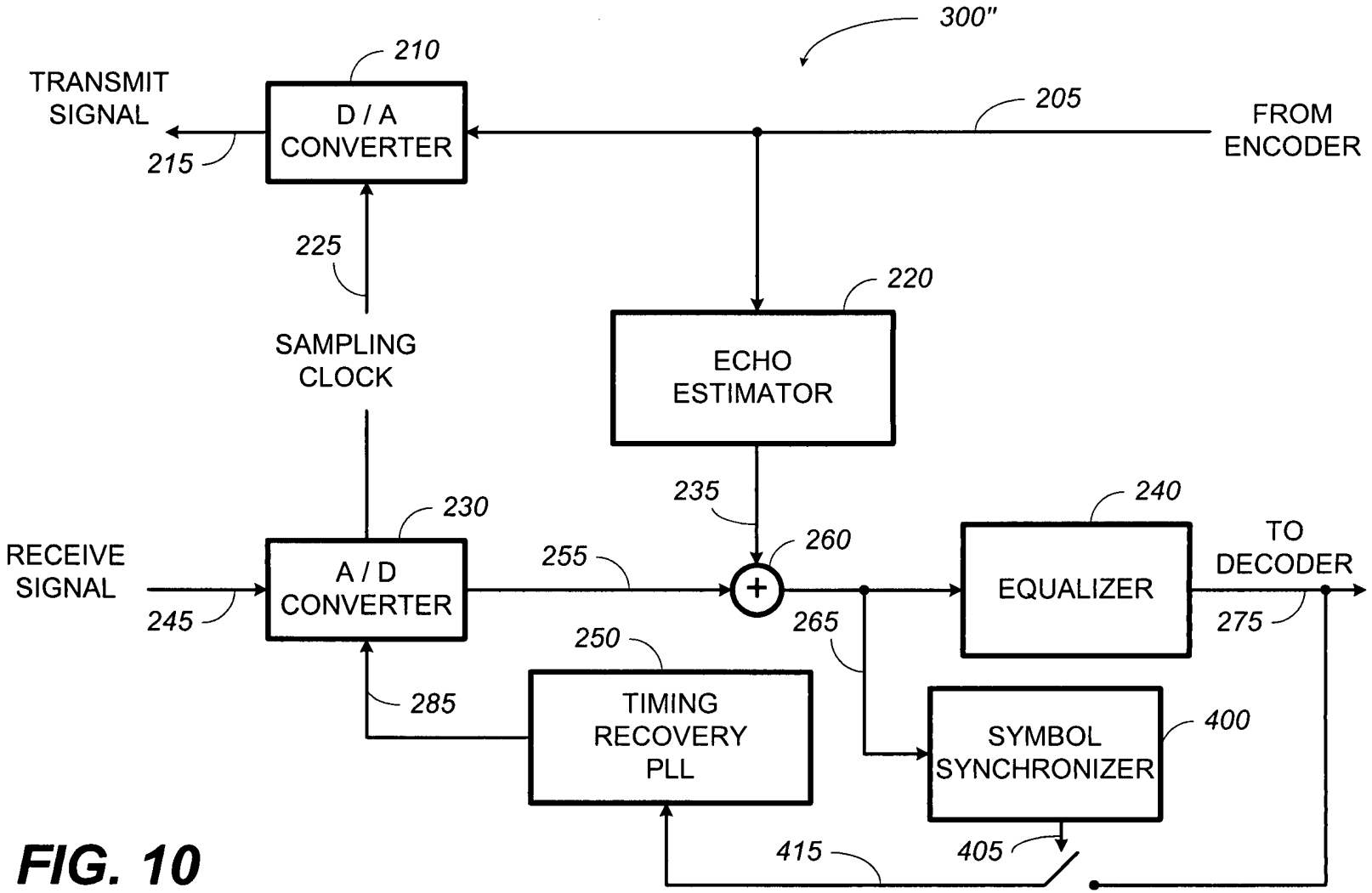

300"
210
TRANSMIT SIGNAL
D / A CONVERTER
215
205
FROM ENCODER
225
SAMPLING CLOCK
220
ECHO ESTIMATOR
235
230
240
RECEIVE SIGNAL
A / D CONVERTER
255
260
EQUALIZER
TO DECODER
245
265
275
250
285
TIMING RECOVERY PLL
SYMBOL SYNCHRONIZER
400
415
405

FIG. 10

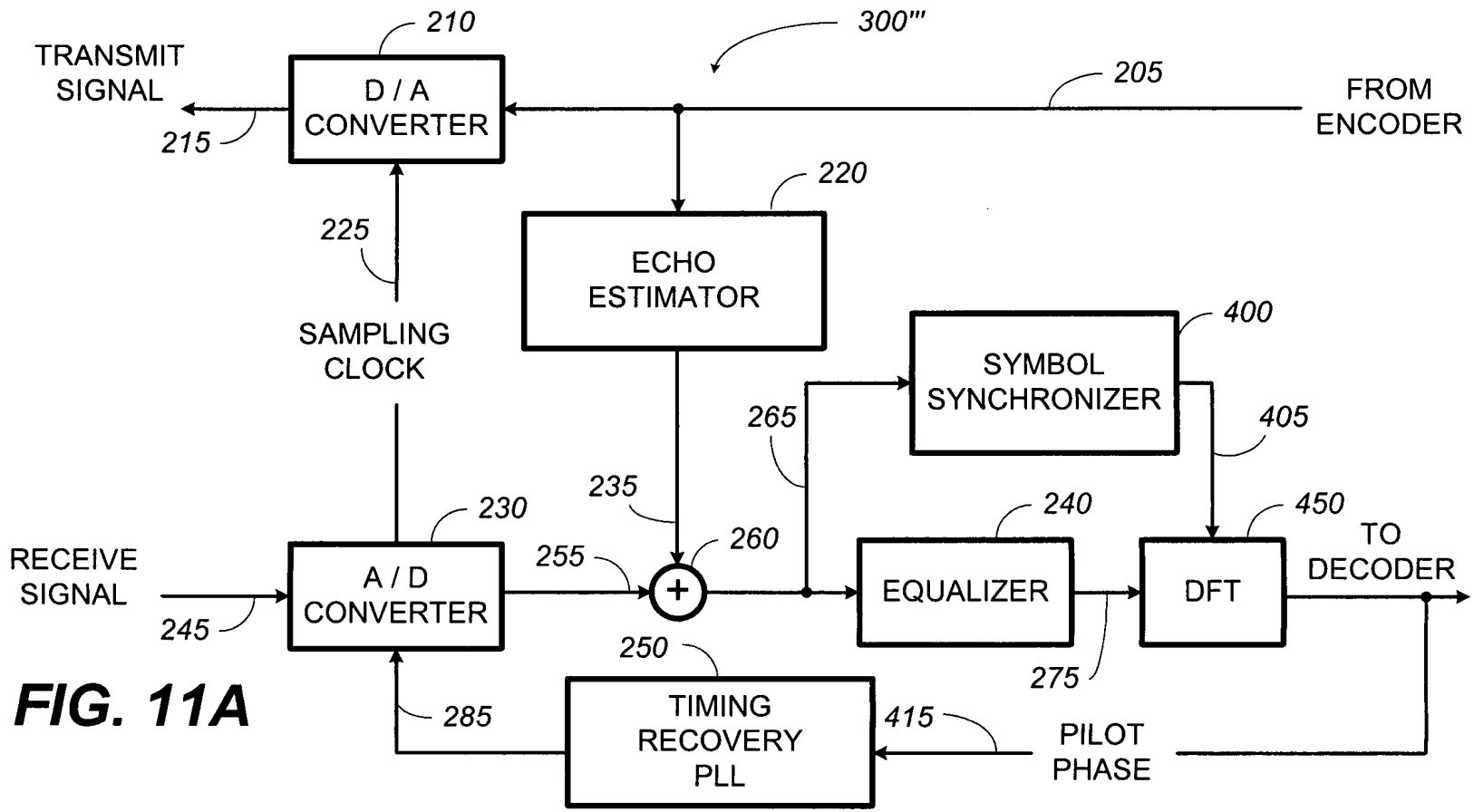


FIG. 11A

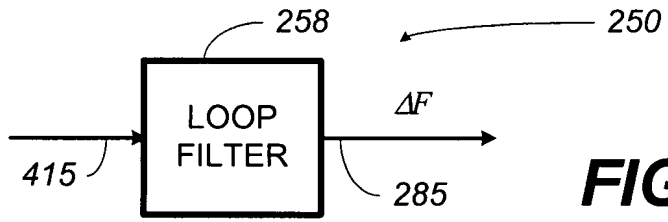


FIG. 11B